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An App a Day to Optimize Your Psychological Health

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(NO COMMENTS)

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With today’s technology, there’s an app for just about everything. Want to turn your latest selfie into a cartoon character? There’s an app for that. Want to track your calorie intake and exercise output? No problem, there’s an app for that. Want to learn how to physiologically control your stress? You got it...there’s an app for that too.

The [Defense Advanced Research Projects Agency](#) (DARPA) and the Office of Naval Research (ONR) are partnering with [Naval Center for Combat and Operational Stress Control](#) (NCCOSC) to conduct a study on the effectiveness of the Stress Resilience Training System (SRTS), an app available for use on select tablets to help Sailors and Marines regulate stress, optimize performance and, ultimately, increase their readiness.

The app not only teaches users about stress and its effects, but also trains them to achieve “HRV Coherence,” a term describing optimal heart rate variability. Heart rate variability (HRV) is a measure of the naturally occurring change between heartbeats. Recent studies have shown that having a high HRV Coherence (a strong and regular pattern of variability) allows individuals to reduce the adverse effects of stress and think more clearly in stressful situations.

SRTS teaches Sailors and Marines how

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to achieve high HRV Coherence through a series of tutorials and video games. The app was designed to have an appealing visual layout – featuring black and white photographs that depict Navy life – and is broken down into four sections (*Know How, Techniques, Games, and Review*) that develop the user’s understanding of stress before teaching techniques to help reduce it.

Know How teaches users what stress is, how to recognize it and how building resilience can mitigate the negative effects while also increasing performance, well-being and unit cohesion.

Techniques explores the concept of HRV Coherence and teaches Sailors and Marines how they can harness it to regulate stress and reach optimal performance. After completing the tutorials, users take narrative-based quizzes to gauge comprehension.

Games trains users to improve their Coherence by providing feedback. Using a heart rate sensor that attaches to the earlobe, users watch a “breath pacer” that helps them get their breathing in an optimal rhythm. They also watch their heart rate variability respond through both a heart rate variability graph and a graphical and numeric representation of their Coherence level. The objective is for users to raise their Coherence level into the “green” zone (75-100%). The SRTS feedback shows users, in real time, how they can affect their neurophysiology.

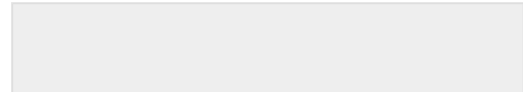
The old adage about walking and chewing gum at the same time applies here – the games force users to concentrate not only on their breathing, but also on what is in front of them on the screen. The games become more difficult as Coherence drops, and easier as it rises – recreating the way stress works in real life. Stressful situations tend to build upon themselves – if a person under pressure can’t control his or her stress, the stress tends to get progressively worse.

Review, the last section, displays performance metrics, identifying areas for improvement and encouraging users to continue their training.

Like anything else in life, practice makes perfect. The SRTS app is designed to be used consistently to learn how to achieve coherence and to practice optimizing physiological and psychological performance.

But does it work?

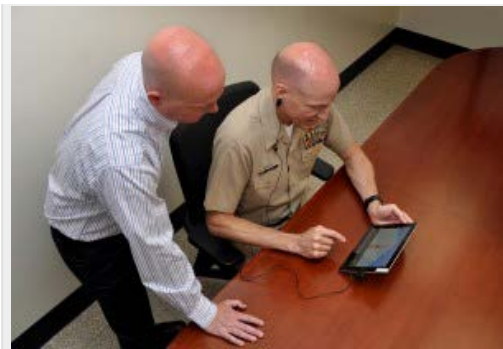
NCCOSC is currently facilitating a study to determine the app’s effectiveness when compared to similar techniques like Progressive Muscle Relaxation (PMR) for regulating stress. The study uses an experimental research design in which volunteer Sailors and Marines are randomly assigned to one of three conditions: the tablet-based SRTS condition, tablet-based PMR condition, and a wait-list control condition (wait-list controls receive the tablet-based SRTS program following the two-month assessment).



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Participants who receive training are issued tablets with either the PMR or



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SRTS applications and are encouraged to use the self-paced program twice daily for eight weeks. Assessments are conducted at the beginning of the study, and at two and four months. The study asks participants to self-report levels of posttraumatic stress, sleep quality, depression, anxiety, stress, combat exposure, unit support and quality of life. Participants are also asked to self-report on how often they use SRTS or PMR.

Preliminary results from two Navy commands indicate that, as compared

with wait-list controls, SRTS condition participants experienced a significant decrease in both depressive symptoms and perceived stress and a non-significant increase in response to stressful experiences. While PMR participants also showed improvement in these areas, the increase was not as significant.

The SRTS group also used the app about two and a half times as often as the PMR group, perhaps suggesting that the SRTS “game” format will entice Sailors and Marines to use it more frequently than they would a more traditional technique, like PMR.

SRTS does not require an Internet connection, making it available for use anywhere. This availability, combined with the app’s game format, gives it the potential to reach a larger number of Sailors and Marines than conventional methods.

Going forward, NCCOSC is working with the app developer to add a module specific to caregivers to help address the unique stressors faced by health care professionals and chaplains who work tirelessly to care for our wounded, ill and injured Sailors and Marines, physically and spiritually.

NCCOSC exists to promote resilience and the psychological well-being of our Sailors and Marines. Part of how we do that is by investigating and facilitating research into promising treatments for stress disorders and ways to prevent them to begin with. By leveraging technology and the affinity our many Sailors and Marines have for video games, we are working to improve psychological force readiness and fundamentally change how we manage and treat psychological illnesses and injuries.

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